

### **C. Amendments to Drawing Figures**

Replacement drawings were presented in Applicant's response submitted March 28, 2007 with a request that existing Figures 1-9 be replaced with replacement sheet figures. This request was not addressed by the Examiner in his final Office action. Applicant requests that the Examiner replace the existing figures with the replacement figures. To assist the Examiner further, a DUPLICATE of the replacement figures 1-9 provided in the response submitted March 28, 2007 is provided with this response.

Applicant submits that to the best of his knowledge these amendments do not add new matter to the specification.

## D. REMARKS

### Regarding the Amendments to the Claims

Claims 1-4, 8-33, 34, 36, 37, 39-48, 50 and 51 have been cancelled.

Claim 5 has been amended by replacing the term " $P(J)_b(LR^{15})$ " with " $P(J)_b(L^1R^{15})$ " on page 59 line 36; the term " $C(L)$ " has been replaced with " $C(L^1)$ " on page 59 line 36; the term " $L$ " has been replaced with the term " $L^1$ " on page 59 line 37; the term wherein " $R^{11}$ " has been properly replaced with " $R^{10}$ " and word "or" has been inserted after the word "moieties" on page 61 line 8.

Claim 6 has been amended by replacing the word "is" before the word "or" on page 61 line 10 with the phrase "further comprises".

Claim 7 has been amended by replacing the number "5" on page 61 line 14 with the number "6" and a period has been added at the end of the claim.

Claim 35 has been amended by replacing the word "asaturated" on page 79 line 2 with the phrase "a saturated" and insert the phrase "thereby crosslinking the natural or synthetic biological molecule" after the word "bond" on page 79 line 7.

Claim 38 has been amended by inserting the word "second" before the word "natural" on page 80 line 16; inserting the phrase "second natural or synthetic biological" before the word "molecule" on page 80 line 17; inserting the phrase "second natural or synthetic biological" before the word "molecule" on page 80 line 19; insert the phrase "thereby crosslinking the natural or synthetic biological molecule" after the word "bond" on page 80 line 20 and inserting the phrase "second natural or synthetic biological" before the word "molecule" on page 80 line 20.

Claim 52 the second occurrence of the term  $\alpha$ -bromoacetamido" has been removed. In addition the Greek letter alpha has been placed in front of the terms "bromoacetyl" and "bromoacetamido" as requested by the Examiner.

Applicant submits that to the best of his knowledge these amendments do not add new matter to the specification.

## **E. PATENTABILITY ARGUMENTS**

### **I. Response to Rejections under 35 U.S.C. §112 second paragraph**

**Item 5:** the Examiner reiterates his rejection of claims 5, 6, 32, 35, 38, 49 and 52 stating that the phrase “a derivative thereof” is indefinite because it is not clear what degree of structural and/or functional similarity is required to be present in a compound of formula II or Va and a second compound in order for the second compound to be considered a derivative of compounds of formulas II or Va. The Examiner further states that while Applicant specification describes examples of derivatives the use of the term “includes” obviates such a definition. Applicant respectfully disagrees and reiterates their response. Applicant has cancelled claim 32 and will discuss this rejection as it applies to claims 5, 6, 35, 38, 49 and 52. As the Examiner is well aware claims have been, and are, interpreted narrowly regardless of the fact that they are supposed to be afforded reasonable breadth based on the Doctrine of Equivalence. Further Applicant has the right to be his/her own lexicographer and define certain terms to clarify their intended meaning within the scope of the claim language. Particularly when there is no definite art recognized meaning that is contrary to that provided by Applicant. Applicant has provided such a definition on page 9 line 26 through page 10 line 24 as noted by the Examiner. However, in order to comply with the Examiner's requests the term “includes” in each place it occurred in this definition has been removed. Consequently, the Examiner's rejections are moot and Applicant respectfully requests that this rejection be removed.

**In Item 6:** The Examiner also rejects claim 7 stating that the claim does not end in a period. Applicant disagrees and notes that the period the Examiner is referring has appeared in the original application as filed, in the previous amendments to the claims and in the amendments presented above. Consequently the Examiner's rejection is moot and Applicant respectfully requests that this rejection be removed.

Further the Examiner states that claim 35, last line and claim 38 second-to-last line the term “biomolecule” should be changed to “biological molecule” to be consistent with the terminology used in the preamble. Applicant has amended claim 35 and 38 as requested by the Examiner. Consequently, the Examiner's rejection is moot and Applicant respectfully requests that this rejection be removed.

The Examiner then states that in claim 52 the Greek letter alpha no longer appears before the terms “bromoacetyl” and “bromoacetamido”. Applicant has amended the claim to include the Greek letter alpha in from of these two terms. Consequently, the Examiner's rejection is moot and Applicant respectfully requests that this rejection be removed.

Further the Examiner states that claim 32 is indefinite because the conjugate of formula Va does not appear to comprise any amino or thiol moieties with which the amino or thiol reactive moieties on the surface can react. Applicant has cancelled this claim consequently the Examiner's rejection is moot and Applicant respectfully requests that this rejection be removed.

**Item 7:** The Examiner objects to claims 6 and 7 as being improper dependent form for failing to further limit the subject matter of a previous claim. Applicant agrees and has amended claim 6 to include the phrase "further comprises" and has amended the dependency of claim 7 from 5 to 6. Consequently, the Examiner's rejections are moot and Applicant respectfully requests that this rejection be removed.

## **II. Response to Rejections under 35 U.S.C. §102(b)**

In order to maintain a rejection under 35 U.S.C. §102 (b) the reference must teach each and every aspect of the claimed invention.

**Item 9:** The Examiner rejects claims 5-7, 35, 38, 49 and 52 under 35 U.S.C. §102(b) as being anticipated by the WO Patent Application 01/70685 stating that this reference is available because the current lack of an acceptable claim for priority under 35 U.S.C. §120. Applicant has amended the specification claiming priority to provisional application serial no.: 60/191,186 filed 22 March 2000. Consequently, this reference is improper based on the corrected and acceptable claim for priority to the provisional application. Therefore, the Examiner's rejections are moot and Applicant respectfully requests that this rejection be removed.

**Item 10:** The Examiner rejects claim 5 under 35 U.S.C. §102(b) as being anticipated by the WO Patent Application 93/14779, "779". More specifically the Examiner states that 779 teaches the reaction of a compound in example 5 with an arginine derivative and the product is then conjugated to the amine group of a solid phase resin which the Examiner states is a derivative of Applicant's compound of claim 5. The cited compound of "779" does not comprise Applicant's compound formula II nor does it teach the use of this compound. Further applicant has eliminated the term "includes" in the definition of derivative in the specification. Consequently the Examiners correlation of the compounds based on the term "derivative" can no longer support this rejection. In fact, the presence of a thiol or amino reactive moiety in Applicant's compound is utilized in one embodiment to bind a biological molecule to the compound of formula II. In addition, formula II comprises a  $\text{-NH=C(R}^1\text{ R}^2\text{)}$  moiety which is not disclosed or taught by 779. For the Examiner to successfully reject claim 5 he must show that the cited reference teaches each and every aspect of the claimed invention. Based on the above argument it is clear that the reference does not teach or disclosure Applicant's formula II. The suggestion by the Examiner that the structure in the cited reference qualifies as a derivative of formula II is improper based on Applicant's definition in the specification. Amendments requested by

the Examiner to this section should assist in providing a clearer definition as to what Applicant intends by his use of the term derivative. Consequently, Applicant respectfully requests that this rejection be removed.

**Item 11:** The Examiner rejects claims 5 and 35 under 35 U.S.C. §102(b) as being anticipated by Whelihan (U.S. Patent 6,238,860). More specifically the Examiner states that Whelihan teaches polypeptides which are synthesized with a Glu-Gly-Gly-Gly-Ser spacer sequence, modified with a hydrazide functionality, and then immobilized on an aldehyde-functional methacrylate resin support. He further states that the polypeptide spacer hydrazide reaction product of Whelihan is deemed to be a derivative of Applicant's compound of formula II and Va. Applicant has eliminated the term "includes" in the definition of derivative in the specification. Consequently the Examiner's correlation of the compounds based on the term "derivative" can no longer support this rejection. In fact, formula II and Va provide for a thiol or amino reactive group indicated by the letter "B" bound to R or the six membered ring in claims 5 and 35 respectively. The cited compound of Whelihan does not comprise this moiety nor does it teach the use of this moiety. In the case of Applicant's invention the presence of a thiol or amino reactive moiety is utilized in one embodiment to bind a biomolecule to the compound of formula II or Va. In addition, formulas II and Va comprise a  $\text{NH}=\text{C}(\text{R}^1 \text{ R}^2)$  moiety which is not disclosed or taught by Whelihan. For the Examiner to successfully reject claims 5 and 35 he must show that the cited references teach each and every aspect of the claimed invention. Based on the above argument it is clear that the reference does not teach or disclose Applicant's formula. The suggestion by the Examiner that the structure in the cited reference qualifies as a derivative of formula II or Va is improper based on Applicant's definition in the specification. Amendments requested by the Examiner to this section should assist in providing a clearer definition as to what Applicant intends by his use of the term derivative. Consequently, Applicant respectfully requests that this rejection be removed.

**Item 12:** The Examiner rejects claims 5 and 38 under 35 U.S.C. §102(b) as being anticipated by Sivam (U.S. Patent 5,521,290). More specifically, the Examiner states that Sivam teaches derivatizing a monoclonal antibody with sulfhydryl groups, reacting a hydrazide-containing bifunctional linker of formula I with the derivatized monoclonal antibody, and then reacting the monoclonal antibody hydrazide with ricin A which has been oxidized to form aldehyde groups on its saccharide moieties. He further states that the reaction product of the derivatized monoclonal antibody and the bifunctional linker of Sivam is deemed to be a derivative of Applicant's compound of formula II and of Applicant's conjugate of formula Va. Applicant has eliminated the term "includes" in the definition of derivative in the specification. Consequently the Examiner's correlation of the compounds based on the term "derivative" can no longer support this rejection. In both formulas II and Va wherein A is  $\text{NH}(\text{C}=\text{O})$ ,  $\text{NH}(\text{C}=\text{S})$ ,  $\text{NH}(\text{C}=\text{NH})$ ,  $\text{NHNH}(\text{C}=\text{O})$ ,  $\text{NHNH}(\text{C}=\text{S})$  all provide a  $\text{-NH-}$  group between R or the six membered ring and the  $\text{-NHNH}_2\text{-}$  respectively. This

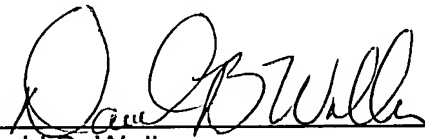
structural element is not taught or disclosed in Sivam. For the Examiner to successfully reject claims 5 and 35 he must show that the cited reference teach each and every aspect of the claimed invention. Based on the above argument it is clear that the reference does not teach or disclosure Applicant's formula. The suggestion by the Examiner that the structure in the cited reference qualifies as a derivative of formula II or Va is improper based on Applicant's definition in the specification. Amendments requested by the Examiner to this section should assist in providing a clearer definition as to what Applicant intends by his use of the term derivative. Consequently, Applicant respectfully requests that this rejection be removed.

### CONCLUSION

The Examiner's rejections have been carefully considered and are not supported by the cited references as required under 37 CFR §102 or §103. In view of the above, Applicant respectfully requests that the Examiner grant Applicant's request for a continued application in order to reconsider his rejections of the claims.

Respectfully submitted,

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